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French Indochina Cities Witness Fighting

CAPITALS of two states sharing the east coast of French Indochina, Hanoi and Hué have datelined reports of the fighting between French troops and the forces of the nationalist party (Viet Nam) which is seeking a greater degree of independence from France.

Hanoi, capital of the whole country as well as of the province of Tonkin, is like a tropical edition of Paris. Its Oriental temples and pagodas replace the Western city's cathedrals and palaces.

Snows from Highlands Cause Annual Floods

On the Rouge River, 115 miles from the Gulf of Tonkin, Hanoi is accessible to ships drawing nine feet or less. Larger vessels dock at Haiphong, 60 miles east of the capital and connected with it by rail and highway. Before the war, Hanoi had nearly 140,000 residents.

The snows of upper Tonkin and of China's Yunnan province, raising the river 16 to 20 feet, cause an annual flood. Protecting dikes rise as high as the second stories of Hanoi's modern business buildings.

In Annamese—the language of the majority of the people—the word Hanoi means "having river boundaries." The name is an accurate description of the city. Along one side flows the Rouge River; countless little lakes border it on the other sides; and the city is centered by a rectangular lake a mile long and half as wide. Pagodas stand on its small islands. By its parklike shores flower girls cry their wares.

Hanoi's main business street borders the south shore of this lake. In peacetime its shops displayed Paris gowns and adornments for the women of the European colony. The majority of the Tonkinese women clung to their picturesque traditional costumes.

In prewar days, Hanoi's French residents lived much as they had in their homeland. At sidewalk cafes along flowery avenues, and at the sumptuous opera house, were seen the latest costumes of Paris design. Hotels bore such typical French names as Splendide and Métropole. Beautiful villas were set in gardens of flowering trees.

North of the European section is the native quarter. It is slashed by narrow streets that take their names from their particular wares—pottery, jewelry, embroidery, leather, copper, and brass work.

Hué Is a Port for Small Ships

Hanoi is a railway center, 100 mountainous miles south of the China border, and not far from the Hongay coal mines. But its industrial possibilities have been little developed, and the city remains primarily a cultural center. It has numerous schools, libraries, museums, botanical gardens, and a university. Most of the city's industries are small-scale handicraft workshops. There are textile mills, distilleries, and potteries.

Hué, 325 miles south of Hanoi, along the S curve of the coast, is a waterfront city without a harbor. It is on both banks of the Hué River, seven miles from its mouth, but the shallow channel bars large ships from the South China Sea. They dock at Tourane, 50 miles south.

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MAYNARD OWEN WILLIAMS

ANNAMESE BOATMEN PROPEL THEIR SAMPAN ALONG A BAMBOO-BORDERED WATERWAY NEAR THE RIVER OF PERFUME

The long coast of Annam is interlaced with rivers, canals, and estuaries, providing a ready-made transport system for the natives. A railroad along the coast connects Hanoi, Hué, and Saigon, three key cities of French Indochina (page 3).

Brazil Jungle Hides Chavantes, Other Tribes

LONG wooed by gifts dropped from airplanes, Brazil's wildest tribe of Indians—the little-known Chavantes, or Shavante—has made its first friendly overtures toward the white man. Representatives of the tribe are reported to have brought gifts to a government mission.

The Chavantes occupy a rich section of Mato (Matto) Grosso province, in the isolated interior of the country. They crossed the Araguaia River almost a century ago, settling along the west bank in the vicinity of the Rio dos Mortes (River of Death) and the Rio Crystallino. Travelers have rarely visited their communities.

Another Tribe Calls Them "Unclothed"

Photographic studies from airplanes show that the Indians build circular huts of palm thatch, about 30 feet in diameter, with arched roofs rising to 10 feet and more at the center. Their settlements are semicircles of huts, with the bachelor's hall or men's club in the center. Ample space is left within the circle for council meetings, dances, and other festivities.

The people are estimated to number 3,500. They wear no clothing, but ornament their heads with feathers and their lips with labrets. They stripe their bodies with paints and stains made of roots, charcoal, clay, and plant juices. One Indian tribe calls the Chavantes "Cucurton," meaning "unclothed."

For killing game and warring with neighbor tribes, the Chavantes still rely mainly on bows and two-feathered arrows, and hardwood clubs. They make no pottery and have not developed the art of weaving by loom. Baskets and gourds substitute.

It is doubtful if the Chavantes ever will literally smoke the peace pipe with the white man, for reports have said that they do not use tobacco. They have been described as a somewhat puritanical people despite their savage characteristics.

Sherente Indians Belong to Same Family

The aerial photographs of Chavantes huts and settlements indicate that their life is similar to that of the Sherente Indians, with whom they have been closely associated historically. Not until the Chavantes moved west of the Araguaia River was there a distinction in territory. The Sherente Indians retained their ancient habitat on both sides of the Tocantins River.

Along the jungle-choked rivers of Goiaz (Goyaz) and Mato Grosso (illustration, page 6) lives the numerous-branched family of primitive peoples known as the Central Ge. One group of tribes is called Akwe. The Chavantes and Sherente Indians are brother units in this group. Another tribe, the Shakriabá, has died out, but the vine-ridden woods are full of cousin-tribes.

These people are primitive farmers. They raise bitter and sweet manioc, corn, sweet potatoes, and yams. They have domesticated a creeper whose starchy tendrils, plus the starch from the roots of the manioc (cassava), is a staple part of their diet. The natural bounty

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Hué was the capital of the Kingdom of Annam before that country became one of the five states of French Indochina. On the north bank of the river rises the Mang-Ca, a moated fort behind whose high brick walls officials of the court reside. Red brick walls form a square within this square, enclosing offices, temples, and gardens—the Imperial City.

Like the core of a nest of play blocks, the royal palace stands in a third walled enclosure. There lived Bao Dai, the native King of Annam whose European education led him to adopt many Western ways. Hatless, in shorts and sweater, he drove an automobile instead of riding sedately on an elephant, as did his ancestors. In the autumn of 1945, after the collapse of Japan, Bao Dai abdicated and became a political adviser to Viet Nam. He has since been elected to its parliament.

Modern Hué was developed from French plans, but the architecture of its pagodas, temples, and palaces is Chinese. Southeast of the city are the tombs of Annam kings. With its elaborate terraces, pools, and mosaics, that of Bao Dai's father, Khai Dinh, is the most pretentious.

Hué stands on a low, hill-rimmed plain traversed by streams (illustration, page 2), and canals that water many square miles of rice fields. Except for work in ivory and glass, industry suffices only for local needs.

NOTE: Hanoi and Hué are shown on the National Geographic Society's Map of Southeast Asia. Write the Society's Headquarters, Washington 6, D. C., for map list.

For further information, see "By Motor Trail Across French Indo-China," in the *National Geographic Magazine* for October, 1935; and "Along the Old Mandarin Road of Indo-China," August, 1931.

MAYNARD OWEN WILLIAMS

WATERY HIGHWAYS ARE WORKWAYS IN ONCE-ROYAL HUÉ

Hué's canals and streams serve many purposes. As highways, they supplement, with their wicker-roofed boats, the trucks now seen in the narrow streets of this ancient Annamese city. They serve as washtubs for peak-hatted laundresses whose ancient chore time has not changed.

NATIONAL PARK SERIES: No. 15

Mt. McKinley, the Continent's Capstone

South-central Alaska's Mt. McKinley National Park, studded with the eternally snow-crowned peaks of the mighty Alaska Range, contains the capstone of the continent. Mt. McKinley (illustration, page 8), 20,300 feet high, is the tallest mountain in North America. Only two parties have attained its summit, which rises higher above the land at its base than any other peak in the world.

The spacious wilderness of the park includes ice-capped peaks, grinding glaciers, high, open rangeland, spruce-clad valleys, and uncounted gemlike lakes. Some of the huge, gnawing glaciers contain more ice than all the glaciers of Switzerland.

Many Varieties of Birds and Animals

On the inland (north) side of the Alaska Range, summers are short and quite warm, while the winters are long and cold, temperatures sometimes dropping to 50 degrees below zero Fahrenheit. Warming ocean breezes temper the climate of the area draining southward to the Pacific. There summers are longer and cooler than in the interior, winters are warmer, and precipitation is much greater.

In late June, the sun is visible at midnight in the park from elevations above 4,000 feet.

Within the park, a vast wild-life sanctuary, 112 kinds of birds and 35 species of animals have been identified. Hunting is prohibited. White mountain sheep and caribou are most numerous among the larger mammals. Many thousands of caribou, sometimes traveling in herds of hundreds, graze within the area. It is the only national park where this animal is found. Handsome white Alaska mountain sheep stay close to the high rough ground above timber line.

Numerous miniature craters dotting the ridges are holes left where the Toklat grizzly bears have dug out ground squirrels, their chief food supply. Alaskans call the ground squirrels "parka squirrels" because their skins are used for making parka coats.

Moose, black and brown bears, Alaska red foxes, hares, marmots, and conies are also seen. Heard more often than seen are wolves, wolverines, lynxes, and coyotes, the last a recent immigrant to the park. Beaver, marten, and mink are fur bearers that swell the animal count.

Highway Runs from Station into Park

Of the approximately 80 species of birds nesting within the park, the most interesting is the rare surfbird, which winters in extreme southern South America and breeds among the mountaintops of central Alaska. Nests of the surfbird have been found nowhere in the world outside Mt. McKinley National Park. Golden eagles, willow ptarmigan, short-billed gulls, eastern robins, Alaska jays, Gambel's sparrows, tree sparrows, and redpolls are other birds at home in the park.

From the entrance at McKinley Park Station on the Alaska Railroad, an excellent gravel highway runs for about 90 miles through the northern half of the park. Many wild animals can be seen through the automobile

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of the forest (for instance, babassú nuts) helps satisfy their wants.

Fishhooks were unknown until recent years. A narcotic made from the timbó creeper is used to drug fish. Sometimes men fish with bow and arrow. Food is cooked in earth ovens, broiled on spits, or roasted on grates. Tribal feasts are purely and simply huge meals, as these peoples have not developed intoxicants.

NOTE: The region of central Brazil inhabited by the Chavantes and Sherente Indians may be located on the National Geographic Society's Map of South America.

For additional information, see "Brazil's Potent Weapons," in the *National Geographic Magazine* for January, 1944; "Through Paraguay and Southern Matto Grosso," October, 1943; and "Air Cruising Through New Brazil," October, 1942.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, December 11, 1944, "Brazil, A New Battle Partner for the Allies."

ALBERT W. STEVENS

THE BRAZIL RAIN FOREST SUPPLIES MAN WITH HIS BASKETLIKE HOME AND HIS DUGOUT CANOE, BUT AT THE SAME TIME ALMOST CROWDS HIM INTO THE RIVER

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Trucks Come and Go, Camels Go on Forever

DURING the war, men in trucks and jeeps whizzed past plodding camel caravans in many parts of Asia and Africa. Though native cameleers gaped at the speed of the machines, they probably wasted little time in envy, for to the unhurried nomad the camel is not only the immemorial means of transportation, but also the very basis of economy.

The camel is equipped by nature for travel over waterless sand. It was used for desert transport long before streamlining was heard of, and in many parts of the world will continue to be employed. The "ship of the desert" can endure from six to ten days without water. One camel can carry a burden of half a ton as far as 25 miles a day.

The Camel Is More than a Beast of Burden

A camel's foot acts on sand as a snowshoe does on snow. Although the camel may be supporting a great weight, it will not sink. The beast's eyelashes—especially long—and its wide nostrils, which can be narrowed to slits, give protection during sandstorms. Chest and knees are padded with leathery calluses, a ready-made armor against flying sand. Sight and smell are acute.

Wherever the camel is bred it becomes a medium of exchange constituting its master's wealth. Its milk is drunk by humans and animals alike. When the camel is slaughtered, rope, robes, and tents are made from its hair; water bottles, shoes, and boots are fashioned from its skin. Camel meat is considered a delicacy, and the hump supplies fat.

The term dromedary, now generally thought of as referring to the one-humped camel, originally applied to a "thoroughbred" breed that could travel at great speed. It differs from ordinary camels in its sensitive nose, small ears, slender legs, and high belly-line.

Actually, all one-humped camels fall into the Arabian, or African, type (illustration, page 10). They are generally sandy in color, stand approximately seven feet high, and can tolerate the Sahara's heat for long periods at a time. They are found in Arabia, India, Egypt, Anglo-Egyptian Sudan, Somaliland, and Australia.

They Are Grumpy and Stupid, but Ploddingly Loyal

Two-humped camels are called Bactrians (illustration, cover). Named after Bactria, ancient designation for northern Afghanistan, they are reddish-brown or black. Found in desert regions throughout most of Asia, this type is able to withstand the cold winters of Mongolia. Bactrian camels have shaggy coats, are sturdier than Arabians, and a difference in foot structure enables them to traverse rocky terrain.

Since the days of Abraham, camels have plodded the desert bearing burdens—but unwillingly and with bad temper. Cameleers often suffer vicious bites, and are sometimes deafened by their camel's snarling disapproval of too heavy a burden. The animals are stupid; their only tricks are learning to kneel and rise on command. Caravans are often led by mules or donkeys, as camels cannot follow a path, and have little sense of direction. When it rains they are overcome with panic.

In addition to endurance, mother love is another good trait of the

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window, and the park's flora can be studied in the same fashion. Black spruce is the commonest tree of the park, but white birch, cottonwood, quaking aspen, and willows are also abundant. Shrubs and wild flowers grow in variety unusual for the high latitude.

At the park entrance stands a hotel accommodating 128 people and open from June 10 to September 15. Savage River Camp, 13 miles from McKinley Park Station, and Camp Eielson, 66 miles west on the highway, provide tent camps for visitors. Guided pack-horse trips are available. Permission must be obtained from park authorities to climb any of the high peaks. The park is reached by the Alaska Railroad from Seward, Pacific-coast calling point for steamers from Seattle, or from Fairbanks in the interior.

NOTE: Mt. McKinley may be located on the Society's Map of North America.

For further information, see "Over the Roof of Our Continent," in the *National Geographic Magazine* for July, 1938.

BRADFORD WASHBURN

THE THIN EDGE OF KARSTENS' RIDGE (CENTER) WAS THE WEDGE BY WHICH CLIMBERS PRIED INTO THE GLITTERING MYSTERIES OF MT. McKINLEY'S SUMMIT

Along this snaky, ice-covered spur trudged the two parties that have reached the highest point in North America. Men attempting other routes have failed. The elevation from the bottom of the ice-fall (center background) to the summit is 9,000 feet, much more than the height of any American peak east of the Mississippi. During a 1936 series of flights co-sponsored by the National Geographic Society, Bradford Washburn made the first complete camera record of Alaska's hoary giant.

Greenwich Observatory Is Moving to Country

THE ROYAL Greenwich Observatory, now being moved from its hilltop beside the Thames in southeast London (illustration, page 12), is to be located in a country castle near another hilltop—where William the Conqueror, in 1066, led the Normans to victory in the Battle of Hastings.

After the transfer is completed, the Royal Observatory will no longer be astride the Greenwich prime meridian, the world standard for measurement of longitude and time.

Zero Meridian to Remain Unchanged

Hurstmonceux Castle, chosen for the observatory's new home, rises from the woodland of east Sussex 45 miles southeast of the present Greenwich site. It is 14½ miles east of the Greenwich meridian and seven miles southwest of the Hastings battlefield.

No change will be made in the location of the zero meridian. That would affect timekeeping, render maps obsolete the world around, and be the biggest geographic story of the year. Instead, time—as calculated by observation of the solar system from Hurstmonceux—will be corrected to allow for one-third degree difference from Greenwich.

A move to the country has long been planned by astronomers royal. London's night lights and the haze created by its industries have hampered scientific observation for some time. In World War II, German bombs disturbed the timekeeping and caused direct damage to near-by Naval College buildings.

The new home of the observatory is a fortified red brick mansion more than 200 feet square. Complete with crenellated towers, portcullis, and a moat, it is a storybook castle with 500 years of history behind it. High double towers, octagonal below and circular above, are joined by an archway over the main gate in the south wall.

Recent restoration of the castle exterior by its last private owners leaves it much as it looked when first built. Interior construction is greatly changed because of the completeness with which it was dismantled in 1777. Rich in local Sussex history, it was visited by prewar tourists.

Washington Conference in 1884 Set Standard

Greenwich Park, site of the original Royal Observatory, was once the grounds of a favorite palace of British monarchs. Henry VIII was born there and lived there in succession with several of his wives. The palace was abandoned after the execution of Charles I.

Charles II sponsored the Royal Observatory on the old palace grounds in 1675. Its international acceptance as a time center had to await the laying of transatlantic cables, which enabled transmission of time signals that tied the hemispheres together with absolute accuracy. Greenwich officially became the point of zero degrees longitude by action of the Washington Meridian Conference in 1884.

Before that event, longitude was measured variously by the maritime powers. In early Christian times, the island of Rhodes in the

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camel. It bears one calf at a time. The three-foot-high baby of the caravan train is carried in a sling from its mother's back until able to walk. It is suckled for about a year.

Caravan camels must be selected carefully, as not all are fit for long marches. Before departing, natives feed their beasts date stones, believing this will make their humps strong and firm. The hump is a reservoir of strength upon which the camel draws when food is not available. A small, flabby hump is a sign of fatigue and an unhealthy condition.

Water is stored in all parts of the camel's body, mostly in tissues under the skin. The amount of liquid carried depends on the quantity of salt the animal takes. Water and salt revive a camel after a long journey, but water alone is apt to give it the "blind staggers."

Camels are used as draught animals. They turn water-lifting wheels and pull plows. Camel cavalry was employed in wars as early as 190 B.C. Animals for warfare and racing now come from a breed known as "mehara." These mounts can cover 100 miles a day.

In 1857, Secretary of War Jefferson Davis introduced the camel to the United States as an experiment in aiding troops and supply movements across desert stretches of the American Southwest. Inexperienced men loaded the animals too heavily. Their feet became cut and bruised. Unable to go on, they were let loose in the desert. Their wild descendants were reported in Arizona as late as 1920.

NOTE: See also "The Camel, Man's Age-Old Servant" (11 photographs in duotone), in the *National Geographic Magazine* for September, 1942.

MAYNARD OWEN WILLIAMS

IN JERUSALEM AN UNLOADED ARABIAN CAMEL WALKS HIGH-NOSED PAST A HUMAN BEARER STRUGGLING UNDER A BULKY WEIGHT

Mediterranean was the zero point. Later, Hierro (Ferro) in the Canary Islands had wide recognition. France measured time from Paris, Portugal from Lisbon (Lisboa), Greece from Athens (Athenai), Russia from Pulkowa near St. Petersburg (now Leningrad), and the United States from Washington.

During World War II, quartz clocks were installed in the Royal Greenwich Observatory and at two other stations in England as the source of Greenwich Mean Time. In the quartz clock, vibrations of a natural quartz crystal caused by current of standardized frequency give accuracy in time measurements to within one-thousandth of a second in 24 hours, compared to one two-hundredths of a second from old-style pendulum clocks.

NOTE: The present and future locations of the Royal Observatory—Greenwich and Hurstmonceux—may be found on the National Geographic Society's Map of the British Isles. Write the Society's headquarters, Washington 6, D. C., for map price list.

For additional information, see "Time and Tide on the Thames," in the *National Geographic Magazine* for February, 1939.

B. ANTHONY STEWART

GREENWICH MEAN TIME SOON WILL NO LONGER COME FROM GREENWICH

The Royal Observatory, while its new location is being readied, continues to send time signals to the world from this historic building in London's suburb. The black time ball drops down the mast at exactly one P.M. every day. Also on the roof of eight-sided Flamsteed House are the rain gauge, sunshine recorder, and anemometer. Named after the first astronomer royal, this structure was built by Sir Christopher Wren in 1676. Inside, the Octagon Room contains the earliest chronometer.

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